

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-16 are currently pending in the application. No claim amendments are presented, thus no new matter is added.

This amendment is submitted in accordance with 37 C.F.R. § 1.116 which after final rejection permits entering amendments, canceling claims, complying with any requirement of form expressly set forth in a previous Office Action, or presenting rejected claims in better form for consideration on appeal. As the present amendment merely amends the specification to comply with requirements of form expressly set forth in the outstanding Office Action, it is respectfully requested that the present amendment be entered under 37 C.F.R. § 1.116.

In the Office Action, Claim 16 and the specification are objected to because of minor informalities; Claims 7 and 14 are rejected under 35 U.S.C. § 112, second paragraph; Claims 1-5, 8-12 and 15-16 are rejected under 35 U.S.C. § 102(b) as anticipated by Kondo et al. (U.S. Pub. 2004/0021775, herein Kondo '775); Claims 6 and 13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Kondo in view of Wang et al. (U.S. Pat. 5,557,684, herein Wang); and Claims 7 and 14 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kondo in view of Wang and Kondo et al. (U.S. Pat. 5,940,539, herein Kondo '539).

The Office Action objected to Claim 16 and the specification citing minor informalities.

Regarding Claim 16, the Office Action asserts that this claim should be read as "output section configured..." instead of "output configured..." Applicants, however, respectfully traverse this objection, as Claim 16 is intended to recite "an output configured...", support for which can be found throughout the specification (e.g. output

section 50). MPEP § 2163.01 points out that “[t]he subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the written description requirement” and the similar pronouncement in In re Wertheim, 191 USPQ 90, 96 (CCPA 1976) as follows:

The function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him; how the specification accomplishes this is not material. *In re Smith*, 481 F.2d 910, 178 USPQ 620 (CCPA 1973), and cases cited therein. It is not necessary that the application describe the claim limitations exactly, *In re Lukach, supra*, but only so clearly that persons of ordinary skill in the art will recognize from the disclosure that appellants invented processes including those limitations. *In re Smythe*, 480 F.2d 1376, 1382, 178 USPQ 279, 284 (CCPA 1973).

Regarding the objections to the specification and Abstract, both are amended to address the minor informalities noted in the outstanding Office Action.

Accordingly, Applicants respectfully request that the objections to Claim 16 and the specification be withdrawn.

The Office Action rejects Claims 7 and 14 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. More particularly, the Office Action asserts that “the term ‘class tap’ is not defined nor is it well known in the art” and is only mentioned at p. 7, ll. 15-27 of the specification. Applicants respectfully traverse this rejection.

Claim 7, for example, recites that the apparatus includes “class determination means for extracting *multiple pixels corresponding to a target pixel in the expanded image as a class tap* from the motion-blurring-mitigated image and determining a class corresponding to the target pixel based on a pixel value of the class tap...” Thus, originally presented Claim 7 explicitly defines the class tap as “*multiple pixels corresponding to a target pixel in the expanded image*” extracted from the motion-blurring-mitigated image. Therefore, Claim 7 particularly points out and distinctly claims the subject matter which Applicants regard as the invention. Similar arguments are applicable to Claim 14, which recites “extracting *multiple*

*pixels corresponding to a target pixel in the expanded image as a class tap* from the motion-blurring-mitigated image and determining a class corresponding to the target pixel based on a pixel value of the class tap...”

Accordingly, Applicants respectfully request that the rejection of Claims 7 and 14 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The Office Action rejects Claims 1-5, 8-12 and 15 under 35 U.S.C. § 102(b) as anticipated by Kondo ‘775. Applicants respectfully traverse this rejection as independent Claims 1, 8 and 15-16 recite novel features not taught by the applied reference.

Independent Claim 1, for example, recites an apparatus for processing an image, said apparatus comprising:

motion vector detection means for detecting a motion vector about a moving object that moves in multiple images ...;

motion-blurring-mitigated object image generation means for generating a motion-blurring-mitigated object image in which motion blurring occurred in the moving object in each image of the multiple images is mitigated by using the motion vector detected by the motion vector detection means; and

output means for combining the motion-blurring-mitigated object image that is generated in the motion-blurring-mitigated object image generation means *into a space-time location, in each image, corresponding to the motion vector* ... to output it as a motion-blurring-mitigated image.

Independent Claims 8 and 15-16, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1, 8, 15 and 16.

Turning to the applied reference, Kondo ‘775 describes an image processing device that detects a movement vector of a moving object by detecting a mixture ratio indicating the proportion of mixing with an image, or taking into consideration a region mixed with the image.<sup>1</sup> As described in paragraphs [0334]-[0336], Kondo ‘775’s apparatus includes a

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<sup>1</sup> Kondo, Abstract.

blurring adjustment unit 106 that uses a movement vector to adjust movement blurring amounts contained in foreground component images.

Kondo '775, however, fails to teach or suggest that his apparatus "combines a motion-blurring-mitigated object image ... *into a space-time location, in each image, corresponding to the motion vector* ... to output it as a motion-blurring-mitigated image," as recited in independent Claim 1.

In the configuration recited in Claim 1, the motion vector is used while determining the position to combine the motion-blurring-mitigated object image *in each image*. For example, the apparatus combines the motion-blurring-mitigated object image into a corresponding position (e.g., a space-time location) in a first image, and combines the same motion-blurring-mitigated object image into a second image, in a temporal (e.g., time) direction *corresponding to the motion vector*. Therefore, in the second image, it is not necessary to again perform to the process to mitigate the motion blur.

In rebutting the previously presented arguments regarding the above noted claimed features, p. 3 of the Office Action cites Figs. 3 and 12, and paragraph [0339] of Kondo '775 stating that Fig. 12 "clearly shows that the motion vector is computed on the first (n) and second (n+1) frame ... then compute a motion vector of frame (n+1) and (n+2)." While this portion of Kondo '775 does appear to show generating a plurality of motion vectors for frames over time, this cited portion of the reference is not related to "combin[ing] a motion-blurring-mitigated object image ... *into a space-time location, in each image, corresponding to the motion vector* ... to output it as a motion-blurring-mitigated image" as recited in independent Claim 1. More specifically, merely generating a motion vector for each frame of a video sequence does not anticipate the claimed feature that that these motion vectors are used to "combine a motion-blurring-mitigated object image ... *into a space-time location, in each image...*" as recited in independent Claim 1.

Moreover, p. 5 of the Office Action again cites Fig. 137 and the “image synthesizing unit” of Kondo ‘775 where the “background component image” and “foreground component image” are combined to reject the claimed features directed to the “output means for combining”. As described at paragraphs [1154]-[1158] of Kondo ‘775, however, the image synthesizing unit 4023 synthesizes a foregoing component image, a mixed region synthesized image supplied from the mixed region image synthesizing unit 4022, and an arbitrary background image, to generate and output a synthesized image. Thus, Kondo ‘775 fails to disclose that a motion vector is used to combine a motion-blurring-mitigated object image into a space-time location, in each image, as recited in independent Claim 1. More specifically, Kondo ‘775 fails to disclose that the image synthesizing unit 4023 uses a motion vector to place a motion-blurring-mitigated object image, whatsoever.

Therefore, Kondo ‘775 fails to disclose an apparatus for processing an image including “output means for combining the motion-blurring-mitigated object image that is generated in the motion-blurring-mitigated object generation means *into a space-time location, in each image, corresponding to the motion vector* . . . to output it as a motion-blurring-mitigated image,” as recited in independent Claim 1.

Accordingly, Applicants respectfully request that the rejection of Claim 1 (and Claims 2-5 which depend therefrom) under 35 U.S.C. § 102 be withdrawn. For substantially similar reasons, it is also submitted that independent Claims 8 (and Claims 9-12 which depend therefrom), 12 and 15-16 patentably define over Kondo.

Regarding the rejection of Claims 6-7 and 13-14 under 35 U.S.C. § 103 as unpatentable over Kondo ‘775 in view of Wang and/or Kondo ‘539, Applicants note that Claims 6-7 and 13-14 depend from independent Claims 1 and 8, respectively, and are believed to be patentable for at least the reasons discussed above. Further, Applicants

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respectfully submit that neither Wang nor Kondo '539 remedy the above-noted deficiencies of Kondo '775.

Accordingly, Applicants respectfully request that the rejection of Claims 6-7 and 13-14 under 35 U.S.C. § 103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-16 is definite and patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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